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via e-mail: koepf@mathematik.uni-kassel.de, or via fax: +49-561-804-4646,
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Fachgruppe Computeralgebra
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Institut für Mathematik, Universität Kassel
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D–34132 Kassel

Fachgruppe Computeralgebra

Fachgruppe Steering Committee

The Steering Committee has at least twelve members. Nine are elected by the members of Fachgruppe, the remaining three are representatives of GI, DMV, and GAMM. Up to three Experts may be appointed to serve on the committee. The term in office is three years.

Members of the Steering Committee

Elected members for the 2014–17 term are Bettina Eick, Claus Fieker, Anne Frühbis-Krüger, Florian Heß, Gregor Kemper, Jürgen Klüners, Martin Kreuzer, Jan Hendrik Müller, Eva Zerz. Representative of GI: Ernst W. Mayr, of DMV: Wolfram Koepf, of GAMM: Sandra Klinge. Appointed Experts: Michael Cuntz (Rundbrief), Thomas Hahn (Physics).

Fachgruppe Chairs

Chair
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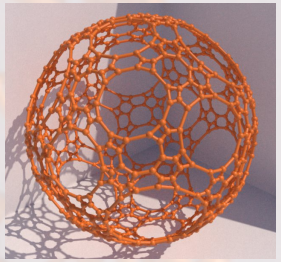
valid as of April 2016

Fachgruppe Computeralgebra

What is Computer Algebra?

Computer Algebra is concerned with solving mathematical problems with the help of symbolic and algebraic algorithms and their implementation in soft- and hardware. Computer Algebra has applications in many mathematical, scientific, and also industrial areas.

Computer Algebra is based on the exact finite representation of finite or infinite mathematical objects and structures and allows their symbolic and formula-based treatment on the computer.



A Pillar of Scientific Computing

Computations with arbitrary-size integers and fractions, with polynomials and power series in arbitrarily many unknowns, with permutations and matrices, the factorization of numbers and polynomials, differentiation and integration, term substitutions and simplifications, exact solution of polynomial systems of equations or differential equations, the representation and study of diverse algebraic structures such as field extensions, cohomology groups, or singularities are concrete examples of problems in Computer Algebra.

Computer Algebra Systems

General-purpose systems:

- Axiom
- Casio ClassPad
- MAGMA
- Maple
- Mathematica
- Maxima
- Reduce
- SAGE
- TI-Nspire

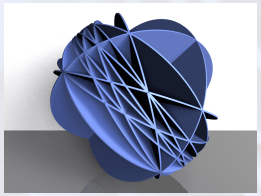
Special systems: see the Fachgruppe Web site.

Fachgruppe Computeralgebra

The Computer Algebra Way

Applications of mathematical methods in natural and technical sciences have traditionally focussed on numerical, possibly inexact methods.

The symbolic methods of Computer Algebra have opened up new fields where exact solutions or structural properties, such as symmetries, are relevant. Computer Algebra furthermore allows to solve problems that depend on unknowns.



Mission Statement

Fachgruppe promotes Computer Algebra-related activities in Germany in

- Teaching
- Applications
- Collaboration
- Research
- Development
- Information exchange

Cooperations

Gesellschaft für Informatik (Trägergesellschaft)

Deutsche Mathematiker-Vereinigung

Gesellschaft für Angewandte Mathematik und Mechanik

Fachgruppe Computeralgebra

Main Activities

- Publication of the Computeralgebra-Rundbrief twice a year for its members
- Hosting the Web portal www.fachgruppe-computeralgebra.de
- Organization of and support for workshops, seminars, and conferences on Computer Algebra
- Promotion of Computer Algebra in high school and university
- Prizes for scientific achievements in Computer Algebra research

Rundbrief Topics

- Conferences organized by Fachgruppe
- Topics and Applications
- News on Systems
- Computer Algebra in High School
- Computer Algebra in University
- Reports from Working Groups
- Publications on Computer Algebra
- Book Reviews
- Theses on Computer Algebra
- Conferences: Alerts and Reports

Membership

Fachgruppe membership is open to everybody, though full membership in one of the cooperating organizations, GI, DMV, or GAMM, is encouraged. The annual membership fee is 7.50 € for members of GI, DMV, or GAMM, otherwise 9.00 €.

Application for Membership in Fachgruppe Computeralgebra starting from ..... (Date)

(Name, Given name, Degree/Title, ZIP City, Phone, E-mail, Fax, Membership in GI/DMV/GAMM,)

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I agree that: • Data in this form are processed and stored electronically. • My contact details will be used for internal mailings of GI, DMV, or GAMM. • My membership fee is automatically drawn from my bank account.

IBAN/BIC: .....

Place, Date, Signature: .....